## Remarks

In response to the Examiner's Office Action dated November 20, 2007, Applicant submits the foregoing amendment and following remarks.

Initially, Applicant notes that the two independent claims herein are directed to unique processing methods for management of memory buffers in digital video decoding and in particular, digital video modes in which "frames of digital video are displayed in other than their original order" (see claim 1) or, more particularly, a "reverse order" (see claim 13).

Claim 1 relates to a method of selecting decode and display buffers for reverse decoding. Notably, as recited in this claim, the decode buffer that will store decoded digital video is selected "without regard to a current playback mode or type of video fram being decoded." That is, the algorithm for selection of a buffer is independent of the type of video or type of frame. This is a key advantageous difference of the claimed invention from the cited prior art, in that the claimed invention may dynamically adapt to widely varying memory arrangements without alteration of the memory management methods used. As stated in the specification at page 104, line 14, "the host may dynamically reallocate memory to change the number of frame buffers on-the-fly. This may be done, for example, during playback mode transitions; e.g., more frame buffers may be made available in reverse playback modes than in other modes to permit faster processing. Furthermore, the foregoing described operations [are] performed for both MPEG-1 input data, such as used on VCD, as well as MPEG-2 input data, such as is used on DVD. It will be appreciated that MPEG-1 data is often recorded at a lower resoltion and accordingly requires less frame buffer space to store. Thus, the number of frame buffers can be larger for VCD playback than DVD playback."

Claim 13 recites a method of managing memory that decodes frames in a "forward order" until frame buffers are "respectively storing first and second prior video frames preceding said current video frame in forward order". Then the prior frames are displayed without re-decoding.

Claim 13 presents a method that advantagously displays all frames of an MPEG stream in their reverse order while avoiding re-decoding of frames. Specifically, forward decoding is used to generate at least two frames preceding the current frame which are then displayed in a reversed order. This is clearly advantagous over decoding methods that, for each frame to be displayed, must decode forward to that frame from first preceding intra-coded or "I" and predicted or "P" frames in the MPEG stream, thus requiring the re-decoding of multiple frames for each displayed frame.

In connection with claims 1 and 13, the Examiner has applied the Comer patent, 6,201,927, in an anticipation rejection. Comer describes a reverse playback mode, however, Applicant submits that the claims presented herein clearly distinguish the Comer patent and requests reconsideration of this rejection.

As an initial matter, Comer Per col. 2 line 66, col. 3, line 12, col. 3 line 54, and col. 10 line 53, the reverse playback operation described by Comer is a "three times speed" reverse playback, and it may be seen that in this operation only the "I" and "P" reference frames of an MPEG group of pictures are decoded. At col. 12, line 32, there begins a discussion of a "six times play speed" reverse playback mode in which fewer "I" and "P" frames, but still no "B" frames, are decoded. The bidirectionally coded "B" frames are ignored during Comer's operations.

The claims as presented above have been clarified to state that intra-coded (I) frames, predicted (P) frames and bidirectionally coded (B) frames are all decoded according to the stated methodology. Specifically claims 1 and 13 both state "the digital video data comprises frames of an intra-coded (I) type, a predicted (P) type and bi-directionally coded (B) type, and frames of all three types are decoded, buffered and displayed in accordance with the method". Although this was previously indicated by the recital in claim 1 that the selection of a decode buffer is made "without regard to ... type of video frame", and the recital in claim 13 of the decoding of frames "preceding [a] current video frame in forward order", this point is now explicit.

Comer has no disclosure of a method that decodes I, P and B frames, and in particular has no suggestion as to how B frames should or could be decoded, buffered or displayed in a reverse playback mode. Indeed, there is no discussion of a reverse playback mode that utilizes all frames – the discussed reverse modes are three times or five times speed, because frames are skipped.

Applicant thus submits that the independent claims as presented distinguish the Comer reference, which is the only reference cited against those claims, and thus all claims are allowable.

If any petition for extension of time is necessary to accompany this communication, please consider this paper a petition for such an extension of time, and apply the appropriate extension of time fee to Deposit Account 23-3000. If any other charges or credits are necessary to complete this communication, please apply them to Deposit Account 23-3000.

Respectfully submitted,

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